I80 TRUCK LANE AND WILDLIFE IMPROVEMENTS

A UDOT Project

NOISE STUDY INFORMATION MEETING

JUNE 13, 2017

6:00 p.m. to 6:30 p.m.

Jeremy Ranch Elementary School
3050 Rasmussen Road
Park City, Utah 84098

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Certified Shorthand Reporter CA

P U B L I C M E E T I N G

KATIE KOURIANOS: Okay. It's 6:00 on the dot, so we'll go ahead and get started if you don't mind. Thanks everybody for coming out tonight. My name is Katie. I work on the Renovate I80 Public Outreach team. I see some familiar faces and some people that I have not yet met, so looking forward to talking with you-all this evening.

As you know, we are here to talk about our I80 Truck Lane and Wildlife Improvements Project, and more specifically about the Noise Study that has been done as part of the project. So I want to give you a quick overview kind of an agenda of what to expect for our presentation tonight and also just let you know who you'll be hearing from as we go throughout the evening.

First of all, I'll do a quick project and environmental analysis overview. From there, we'll go into hearing more about UDOT's noise abatement policy and kind of the structure that's guiding all of it. So that will be shared with us by Naomi Kisen. She is UDOT's environmental program manager. She'll go ahead and take that part for us.

After that we'll go into a little bit more detail with Dave Shannon. He's our noise expert that

is here with us from our consultant engineer team. He'll dive in a little bit deeper to what is noise, different levels, how they sound, and most importantly the study that was done for I80, the process, the areas that were studied, and the results that were garnered from that.

From there he'll turn it back over to Naomi to talk about the noise abatement wall balloting process, and she'll give you kind of an overview of how that fits within UDOT's overall policy and what to expect as far as timing and next steps for that process.

We do ask that any questions or comments, things like that, are held for our Open House portion after this 30-minute presentation. We have a lot of technical information to go through. We want to be sure that we give you all of that information. We might answer some of your questions in the presentation we prepared, so if we could hold any questions or comments until we break and go into the Open House behind us, that will be much appreciated.

You'll be able to talk one-on-one with all of our presenters here tonight as well as our additional staff. You'll see we have quite a few people here. Anybody in a nametag will be able to

answer questions that you may have about the noise study, the results as well as the project as a whole.

PUBLIC: So we can't ask questions in the group setting?

KATIE KOURIANOS: We're going to do that in the Open House so we can get through all of our material. I appreciate it. Thank you.

For those of you who don't know, as I mentioned, this project is designed to build a westbound truck lane on I80 between Jeremy Ranch and Summit Park. We also will be putting in new asphalt pavement in both directions of I80 from Jeremy Ranch to Lambs Canyon.

And as part of this, we've also included some wildlife mitigation improvements, namely, additional wildlife fencing on both sides of the freeway between Jeremy Ranch and Summit Park, and a proposed wildlife overpass that's proposed to be built near the County line, the Salt Lake and Summit County line.

And as part of this, I mentioned before, we've been doing an environmental analysis as part of this project. We are about to wrap up the environmental document, which when it's complete will be available for public review, and these are just

kind of a snapshot of the things that we've found. So you'll see here results for threatened and endanger species, wetlands and water, cultural resources, impacts to right-of-way, and, of course, what most of you, I think, are here to learn about tonight, the impacts for noise.

So we'll go ahead and jump right into it. I'll turn this over to Naomi Kisen, as I mentioned, to talk about UDOT's noise abatement policy first.

NAOMI KISEN: All right. Let's see if I can figure out how to use the clicker.

So UDOT has a noise abatement policy and we have that policy --

PUBLIC: We can't hear you.

PUBLIC: Hold it closer to your mouth.

NAOMI KISEN: How is that? Good? Okay.

So UDOT has a noise abatement policy, and every state D.O.T. has a noise abatement policy because it's in federal code. And federal code also dictates the nature of the program that we need to have as well as some of the thresholds, so the program that UDOT has for noise abatement is called a Type 1 noise abatement program.

And what that means is that for certain types of projects, basically projects that add

capacity like this project, we need to look at providing noise abatement for what we call impacted receptors within the limits of the project.

So basically what that means is that within the start and end of the project, people who are impacted by the project are eligible for noise abatement, and as part of that policy, we look at -- we establish several -- sorry. Can you hear me? Is that good now?

PUBLIC: It's not very loud.

NAOMI KISEN: It's not very loud? How's that? Is that better?

Okay. So because the climbing lane functions as a through lane of traffic, we need to look at noise impact for that, and we have a policy -- it's available online. There's also a state code that kind of supports the policy.

And what it says is that we need to provide noise mitigation which takes place as a noise wall for impacted receptors, which is basically a house or an area of frequent human use -- so it can be outdoor areas as well -- if that mitigation is reasonable and feasible.

And the way we decide if someone is an impacted receptor is there are certain thresholds of

noise that are set, again, by the federal government, and then we have approach criteria, so we look at a noise level that's slightly below that federal level.

We put that information in a model, and we model the impacted areas, and then based on that information, if an area is impacted, we then look at reasonable and feasible.

So those thresholds have to do with how much of a reduction in noise volume we can provide as well as issues like safety. So, for example, if we were going to build a wall that was so tall that if it were to fall over it would fall into the roadway, that would be considered unsafe, and then we also look at a cost criteria.

I don't know if anyone wants specific details on what those thresholds are in terms of the reasonable and feasible, but that is available on the UDOT website in our noise policy. Is anyone interested in knowing what they are right now?

PUBLIC: Yes.

NAOMI KISEN: Okay. So in order for a wall to be considered feasible, it has to provide a 5 dba reduction, which is kind of decibels weighted for human perception, to 50 percent of front-row receivers.

So basically it's your house here and the road is here. Would building a wall give you a 5 dba reduction? And some of this is kind of going into the next slide, but a 5 dba reduction -- so a 3 dba difference in volume is generally considered to be perceivable to the human ear.

So we have to be able to provide at least a 5 dba reduction for 50 percent of those front-row receivers, and then it also has to be safe. It has to meet that safety threshold that I was talking about before. So things like if the noise wall were to fall over would it fall into traffic? Would it fall on to a residence, that type of thing.

And then there's the reasonable criteria which means that we need to decide, "Okay, so we can build this, but is it also reasonable?" So is the benefit we're getting good enough to justify building it.

And the reasonable criteria is that that wall also has to provide 7 dba reduction for 35 percent of those front-row receivers. So if there were a hundred front-row receivers, 50 percent of them have to get a 5 dba reduction and 35 of them would have to get a 7 dba reduction. Does that make sense?

And, again, it's just for -- so Type 1 project is only for -- so we don't consider noise abatement unless there's a project going. Right? So unless there's a project happening we don't have a mechanism for looking at noise abatement and that project has to be happening adjacent to the area that we're looking at for noise impacts. Good? All right.

DAVE SHANNON: Thank you-all for coming out tonight. I do a lot of work with noise and I like to see that a lot of other people are actually interested in this topic.

What is noise? You know, annoying sounds, common noise levels -- speaking in conversational tone is in the mid-60s for decibels. A library might be in the 40s. Very loud might be 70s or 80s. Hearing damage is 90s. I don't think you probably can see most of these. This is available in the other room too. You can see just common noise levels to give you an idea of what the results of our study sort of mean.

I think this is really why you guys are here tonight is to understand sort of the process that we go through with one of these studies. When we have federal funding involved, we have to follow

federal regulations. That triggers the UDOT noise policy.

This project adds a truck climbing lane which is the trigger for why we are doing a noise study. The first thing we do is we look at what the physical limits of the project are, and that helps us to define where we are actually going to look at noise.

We look at all the noise sensitive land uses that are adjacent to the project. Those can be residences, parks, schools. Typically we look at frequent human outdoor use. What we want to concentrate on are areas where lower noise levels would be a benefit.

We don't look at things like gas stations or parking lots where people are just getting out of their cars and going into the movies and things like that. We look at areas where people are actually going to spend a decent amount of time usually outdoors.

We use what is called the Traffic Noise Model to calculate noise levels. This is a model that's published by Federal Highway Administration. It's the only model that's allowable for use on federal projects.

Three components go into the noise model. There's sources such as roadways. There are receivers which are typically receptors, properties, or noise sensitive areas, and then there are a variety of elements that we can put in which affect the propagation of noise between the source and the receiver, things like building rows, existing noise barriers, tree lines, park services like parking lots and ponds.

All these elements are put together into a noise model that we can use to calculate both existing noise levels and what we call future noise levels. We take the best information that we have from a variety of sources. We have topographic mapping. We have detailed survey information, design plans. That all is used to define the physical area for the noise model.

The traffic is a big component of affecting noise levels, and what we do is use what is called the Level of Service C Volume. There are five different levels of service when it comes to traffic, and that's what traffic engineers use to describe how well traffic is flowing.

Level Service A would be what you see on an interstate in the middle of the night where you don't

have anybody behind you or in front of you and you can drive as fast as you want. B is where there's some traffic but it's really not in your way. It's not very annoying. Level Service C is when you need to pay attention to what's going on around you, but you can still travel at the posted speed limit.

Level Service D is when things are starting to get congested, and on an interstate it's when you may have a car in front of you that you can't get around. Speeds are generally starting to slow down. They can't quite get the posted limit, and then it really falls off at E and F. That's when you've got congestion. You've got a parking lot, that sort of thing.

So we study what's called the worst noise hour, and that happens to be a Level Service C, and we use highway capacity software to figure out what that is. UDOT keeps track of a lot of traffic statistics including the percentages within traffic flow of medium trucks and heavy trucks, not just cars.

So we can use that traffic broken down within our noise models to make them even more accurate because different size vehicles do create different amounts of noise but also different types

of noise.

So we look at Level Service C which is the worst hour. We don't know when during the day that might occur. There may be more than one time during the day when that occurs. It may be on each side of a peak hour. It may be just once during the afternoon.

The worst noise for existing conditions, the time period may not be the same as for the future, but that's okay. We're just looking at what's out there now and what's going to be a result of the project.

That future noise level also doesn't really have a year assigned to it. It may not be five years in the future. It may be ten. It may be fifteen before that actually comes to pass. It won't be necessarily the day the project is built, but as traffic levels generally increase at some point, that Level of Service C volume is going to be the worst that it can be.

So we build our existing noise model, but we want to make sure that it's actually accurate, so we also go out in the field with a noise meter and we run it for usually about 20 minutes at a time at various locations, and while that noise meter is

running we count all the cars going by, and that can be -- it can make your eyes goes cross if you're doing a road like I80 trying to count all those.

So usually for something that big we actually videotape it, and we go back and watch the movie later and count all the cars going by. We go back -- we take that traffic and we take our measurement point, and we put that into our existing conditions noise model, and we know what it should say, and then we see what our model tell us.

And if our model isn't telling us we're close enough, then we need to go back and look at it. "Okay. What's happening in between the roadway and the receptor that's influencing how that traffic is propagated or that noise is propagating?" And that tells us this is the level of effort that we need to be at when we're doing our model.

If we're in a very hilly area like along I80 right out here, we have a lot of terrain lines we need to worry about. There's a lot of things in between the source and the receiver that we need to be concerned about. If we're in an area where it is dead flat and there's nothing in between, we almost don't need to put anything in the model besides the traffic and the receptor and it's accurate.

So if we are within three decibels of what we measured with what our model tell us, that's considered accurate enough to be acceptable for a federal level noise study. So we did that for this project, and all of our receivers -- all of our measurement locations came out within three decibels.

So once we know that our model is validated -- and I use "validated" very specifically, not "calibrated" because we're not allowed to change anything about the way that the model actually does its math. All we can change is our inputs into it like roadways and traffic and terrain lines and receptors and things like.

We can't actually change how the model itself is going to math. So we're not calibrating it. All we're doing is validating it. Once we have our results, we look at two different types of impact criteria. This is the noise abatement criteria. This is published by Federal Highway Administration, and their regulation says that the states all have to adopt a policy which includes this information and they can define what they want to call "approaching these levels."

And a noise impact is considered when it approaches or exceeds these numbers. UDOT has

defined approach as one decibel. So for these different categories of lane uses, almost everything on this project is either B or C. B is residential and C is schools and churches and cemeteries and playgrounds and things like that.

Both of those, the FHWA criteria is 67 decibels, and so UDOT's policy is that -- 1 dba approach to that would be 66 decibels, so that's the impact. So we look at all the results. If anything is 66 decibels or higher for the build condition, that's considered a noise impact.

It could be that we have noise levels out there now that are higher than that and that by constructing the project it actually reduces noise levels which can happen depending on different components that are built into the project. You may end up with noise levels that are actually lower.

That didn't happen in this project, so it's not a concern, but if we had what are considered existing impacts, those are not something that warrants a consideration for mitigation.

The second criteria is an increase criteria for impacts, and that is more applicable to projects that are a new alignment, not if a roadway project increases noise by 10 decibels or more. That's also

considered an impact, but because this is along an existing route, I80, the majority of the increases of noise were on the order of 1 to 2 to 3 decibels -- I'm not sure we even got any that were at 3 decibels -- that's considered barely an increase because this project really isn't shifting the roadway much closer to anything. It's just adding a lane, and that increase can be associated really just due to a slight increase of traffic that could be accommodated by adding the climbing lane.

So we found 38 residential properties that were impacted and 5 recreational areas. Like I said, no substantial increases. So because we had impacts, that means we have to take a look at mitigation, and mitigation can consist of things like restricting truck traffic. It can be making cars slow down. It can be buffer zones.

None of those things really have ever been shown to really be effective. Especially on an interstate there's a lot we actually cannot change about it, so the one thing that we really can look at are noise barriers. When we look at a barrier, the first thing to look at like Naomi mentioned is feasibility.

There's three general components to it.

Can it physically be built? Is it going to result in any safety considerations? And will it accomplish at least a 5 decibel reduction at 50 percent of the impacted front-row properties? If we can't get those three, then we just stop the analysis at that point and say it just can't be built.

If it passes that test, then we start to look at reasonability, and that's where we kind of sharpen the pencil a little bit and we start to look at the effects of different height of barrier on what the noise levels would be.

We want to achieve meaningful noise reduction. Meaningful is on the order of 7 to 10 decibels. That's in the spirit of the Federal Highway's regulations, but they don't necessarily dictate what the states have to get. The states are allowed to define that themselves.

Utah has defined their reduction goal as 7 decibels at a minimum of 35 percent of the front-row properties. That's not the only component to reasonableness. We have to make sure too that it's not going to be too expensive, and so we estimate the cost of a barrier at $20 a square foot.

The reason that number is used is because it is statewide and that way all barriers in the

state get the same consideration. It doesn't matter what types of properties they are trying to protect. It doesn't matter where in the state they are. They are all exactly the same, $20 per square foot for residential properties.

For things like parks, which are a little bit harder to establish a residential equivalency of -- you know, how many homes does a park equal? -- what they do is they say they are allowed $360 per linear foot, and at $20 a square foot, that basically is an 18-foot wall.

So if an 18-foot wall works, great. If we can get a wall that's shorter than 18 feet to work to protect the park, perfect, but we're always striving to get that 7 decibels reduction in noise.

So if we can show that a barrier meets both the reduction goal and the cost effectiveness goal, then we consider the third part of abatement, and that's the views of affected property owners. And UDOT has established that any property that is benefited by a barrier, meaning the 5 decibel reduction, will get the chance to say whether or not they are in favor of a barrier.

We also understand that there are situations where a barrier may extend along a

neighborhood and at the ends of the barrier those properties may not actually receive a 5 decibel reduction but that barrier is still going to be pretty close to their property and they should have a say in whether or not they get to vote too, so if a property is located at the end of a barrier or adjacent to it, they may also get a chance to give a thumbs up or a thumbs down on the barrier.

And that's done through a balloting process. I won't go into the details of the balloting process right now, but anytime we're reaching out to the public, it can be difficult to get a response back, so there's two rounds of balloting, and we have to get back a certain number of ballots.

And then if 75 percent -- I believe it's 75 -- are in favor of a wall, then UDOT will continue to consider it. And I say "continue to consider" because we still have feasible issues. We still have all the reasonable issues.

Design of a barrier is part of a larger project process, and so something may come up during the project that we did not know about when we were looking at these barriers that make them no longer feasible. So the balloting process is not the end of

the process, but it's towards the end of the process. I'll say that.

So the one barrier that we found to be both feasible and reasonable is basically along the golf course out here where the terrain is relatively flat. In other areas we had either the terrain and the existing components of I80 itself -- and by that I mean the superelevation, the way the lanes are in elevation to each other, the existing Jersey barrier that's out there -- those things combined to either make it so that we didn't have impacts in other areas or the terrain itself where we've got elevations of receptors that are much, much higher than the roadway, that makes it so that a barrier just isn't feasible in those areas, and those impacts we just cannot mitigate.

So we found one barrier that met both feasible and reasonable for the cost and the reduction goal, and that is looking like the one barrier that is going to advance to the balloting stage, and I think that's what you're all here tonight to take a look at.

So far we have identified 22 benefited receptors. There may end up being more. We identified the 22 as part of our study to determine

if it was cost reasonable, but now that it will go to balloting, we are going to take a little bit more of a look to see if there are any more receptors that may end up being benefited by that wall, and they will have a chance to weigh in on whether or not they would like it.

So I think I'm going to turn it back over at that point, and I will be around if anybody has any questions.

KATIE KOURIANOS: All right. Thank you, Dave and Naomi.

So just to give you a little bit of clarification, we're scheduled to start the balloting process later this month. We have preliminary information in our Open House you can take a look at to kind of get a better understanding of who those identified benefited receptors are at this stage.

So just so you know you'll see that if you go back into the Open House that way. Any question and concerns, things like that, we're going to take right in here. Our staff is ready to answer them.

PUBLIC: Wait. A lot of us have the same questions. Why do we have to go in there? I want to hear what everybody else is asking, so I want to do it in a setting like this.

KATIE KOURIANOS: We just wanted to have all of our visuals and things that we could talk through and show you which we don't have here. We have maps and things that I think will help answer your questions.

PUBLIC: All right. So I have a question, and I want to ask it in here.

KATIE KOURIANOS: Okay.

(Whereupon the presentation section of the meeting was concluded at 6:30 p.m.)

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C E R T I F I C A T E

STATE OF UTAH)
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COUNTY OF UTAH)

THIS IS TO CERTIFY that the foregoing meeting was taken before me, Letitia L. Meredith, Registered Professional Reporter and Notary Public in and for the State of Utah and State of California.

That the meeting was reported by me in Stenotype, and thereafter transcribed by computer under my supervision, and that a full, true, and correct transcription is set forth in the foregoing pages.

I further certify that I am not of kin or otherwise associated with any of the parties to said cause of action, and that I am not interested in the event thereof.

WITNESS MY HAND and official seal at Spanish Fork, Utah, this ___ day of _____ 2017.

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Letitia L. Meredith, CSR/RPR